

opening, the petals affording some purchase; but after they are fully open the radiating stamens form an efficient barrier.

✓ 2. *Hesperaster nudus* (*Bartonia nuda* Pursh, Fl. Am. Sept. 328. 1814). Vespertine.

✓ 3. *Hesperaster laevicaulis* (*Bartonia laevicaulis* Dougl.; Hook. Fl. Bor.-Am. 1: 221. 1833). Diurnal.

✓ 4. *Hesperaster Rusbyi* (*Mentzelia Rusbyi* Wooton, Bull. Torr. Club, 25: 261. 1898). Vespertine. Its distribution in New Mexico is peculiar; I have found it in the Sacramento Mountains and around Las Vegas, where there is no *H. multiflorus*. The latter occurs at Santa Fé, Raton and in the Mesilla Valley, to the exclusion of *H. Rusbyi*.

✓ 5. *Hesperaster multiflorus* (*Bartonia multiflora* Nutt. Journ. Acad. Phila. II. 1: 180. 1848). Diurnal. The flowers are erroneously stated by Coulter to be deep yellow. They are in reality little darker than those of *H. decapetalus*. They are freely visited by bees, especially *Perdita*.

✓ 6. *Hesperaster perennis* (*Mentzelia perennis* Wooton, Bull. Torr. Club, 25: 260. 1898). Diurnal (?)

✓ 7. *Hesperaster pumilus* (*Mentzelia pumila* T. & G. Fl. N. Am. 1: 535). Vespertine, according to Miss Eastwood, Proc. Cal. Ac. Sci. II. 6: 291.

✓ 8. *Hesperaster chrysanthus* (*Mentzelia chrysantha* Engelm.; Brandegee, Fl. S. W. Col. 237). Diurnal (?)

✓ 9. *Hesperaster densus* (*Mentzelia densa* Greene, Pittonia, 3: 99. 1896).

— *H. perennis* (Wooton), and *H. densus* (Greene) are perennials; the others apparently all biennials. The latter is a Colorado species and has probably been confused with *H. multiflorus*. I have been greatly indebted to Dr. Rydberg for advice when preparing these notes.

EAST LAS VEGAS, NEW MEXICO.

SHORTER NOTES

EXPLOSIVE FRUITS.—During the present year a portion of our experiment grounds has been in Polemoniaceae, including spe-

cies in the following genera : *Phlox*, *Gilia*, *Polemonium* and *Cobaea*, the first-named having the greatest space and the largest representation of species, including wild and cultivated representatives. The *Phlox Drummondii*, an annual of the gardens, has been in blossom for many months and has demonstrated its right to a place in the ornamental grounds, because of its ease of culture, profusion of blooms and not least for its intrinsic beauty.

Now as the freezing weather comes the end is near, but the lighter frosts of earlier nights had no disturbing effect. While the particolored blooms are still numerous, they are not sufficient to obscure the clusters of small dry stars that cover the stems, and below them the ground is covered all around with the young seedlings ready for the coming year.

It is to these "stars" that the reader's attention is called, for they are nothing other than the calyces of the phlox flowers standing open and empty upon their short stiff stems. They are like so many miniature nests from which the eggs have hatched and the fledglings have flown. This is not so figurative a statement as it first seems for each "nest" has three as the normal number of seeds, which are of large size, as seeds go, and represent the offspring as do the eggs. Here we must note a material change in the method of dispersion, for eggs take to themselves wings by hatching and the wings bear away the young. Our smooth and shiny phlox capsule as it matures separates quickly along three lines and with such force are the parts disturbed that the three seeds within are thrown out for some distance. At the same time there is a distinct sound that can be heard for several feet and as one works among the phlox plants, carrying pollen to a tiny stigma or adjusting a bag to a castrated blossom, he may feel the seeds as they are hurled against his face or rattle upon the straw of his broad-brimmed hat. When mature pods are placed three or more feet from a wall the seeds may be thrown across the intervening space. The wonder is that so small a body can possess so much explosive and expulsive power. After the vegetable mortar is fired there remains only the calyx as a sort of gun-carriage which takes on in drying the "star" above described.—BYRON D. HALSTED.

NEW METHODS OF DRYING PLANTS.—In a recent number of *Flora** certain improved methods of drying plants are described which, according to a note appended by Professor Goebel to the article, are highly successful.

The first method consists of using, instead of the ordinary drying paper, sheets of cotton batting. The batting is cut to regular size and then inclosed in covers of tissue paper glued along the margins. The plants are placed between layers of these sheets and then put in an open-work press. Without further changing, except in the case of very fleshy plants, the specimens are dried in two or three days. Especially delicate plants liable to be easily torn should be placed first between sheets of tissue paper alone and then laid on the driers.

The second method † is more complicated but is very rapid and is recommended especially for climates which are moist. Half an hour to an hour, or in the case of unusually fleshy plants, somewhat longer, is sufficient to dry the specimens thoroughly. The principle consists simply of this. A cylinder of tin or rus-sia iron, say 50 cm. high by 35 cm. in diameter, and, punctured with holes like a colander, is supported over a kerosene lamp or Bunsen flame, the plants being strapped on the outside. The latter process is the one which is more or less complicated. First the cylinder is permanently covered with linen or some kind of cloth. Then a second removable cover is made, which will barely meet around the cylinder; on its edges are strips of wood provided with metal screws which can be used to draw the cloth tight. ‡ Thus prepared the cover is laid on the table and the plants enclosed in several layers of filter paper placed on it. The cylinder on its side is then laid on top of the whole and the cloth with the specimens is wrapped carefully around it. The screws are then tightened, binding the whole mass to the cylinder, which is set up on end on a tripod over the flame. The drying proceeds rapidly but care must be taken not to burn the specimens. As they dry the cover loosens and must be tightened from time

* Prof. S. Rostowzew, Laboratorium Notizen. Ueber einige Methoden des Trocknens der Pflanzen für das Herbarium. *Flora*, 88 : 473. 1901.

† First employed by Herr Jegorow of Moscow.

‡ It is possible that the adjustable catches such as are used on "arctics" could be ed for this.

to time. The plants will be slightly curved when dried but may be readily straightened out by placing them for a short time under moderate pressure. By this method it is said that the natural colors of the plants are admirably preserved.—H. M. R.

BROMELIACEAE IN COSTA RICA.—The monograph of the Bromeliaceae by Dr. C. Mez, the great specialist, gives the number of known species in Costa Rica as 56 (in 1896). Yet the real number of species in that small country is about 300. All the genera with superior ovary are epiphytes in Costa Rica, as are also, among those with inferior ovary, the two genera *Aechmea* and *Billbergia* and a few of the genus *Hepetis*. The chief reasons why such a small percentage of the species is recognized are to be sought in the great similarity of many species and the dissimilarity of individuals of the same species at different ages and under different conditions. There are many species with a number of varieties and finally there is a complete confusion of natural hybrids among the superb large *Conostachides* of the high frost-region. For these reasons, there are few botanists and collectors who venture to take up the Bromeliaceae seriously in Costa Rica. Only after living for years in the Bromeliaceae region does one become able to recognize the types. Dr. Mez states that the same confusion exists among the smaller species of *Tillandsia* in Argentina, etc., where they have become entirely mixed by natural crossing. Another reason for the present neglect of this exceedingly interesting family is the difficulty in drying most species, especially in the wet season. Again many species have a very local distribution or are very scarce.—C. WERCKLÉ.

A TEXAN CHERRY—*Prunus eximia*. A tree becoming 26 m. tall, with wide-spreading branches and glabrous twigs. Leaf-blades relatively thin, mainly ovate, varying to oblong, oblong-lanceolate or oval, 3–8 cm. long, obtuse, or slightly acuminate, but blunt, glabrous, delicately reticulated, serrate with appressed teeth, bright green above, pale green beneath, slender-petioled: racemes drooping, 5–7 cm. long, glabrous: pedicels 4–8 mm. long, thickened upward: sepals deltoid, slightly broader than long, acute: corolla white, 10–12 mm. broad: petals orbicular-ovate: drupe globular, 8–10 mm. in diameter, purple, sweet.

In river valleys, south-central Texas. Type, *Heller*, Pl. So. Tex., no. 1592.

Related to *Prunus serotina*, from which it is distinguished by the deltoid acute sepals and by the delicately reticulated and differently shaped leaf-blades. Mr. Howard Lacy, a resident of the region where *P. eximia* grows, informs me that the fruit of the tree is sweet and much eaten by the children. He says also that it has a great attraction for bears and hogs.—J. K. SMALL.

FIELD DAYS OF THE TORREY BOTANICAL CLUB.—David S. George acted as the representative of the New York Botanical Garden on the excursion to Rockaway Park, Long Island, September 7th. A few interesting coast plants were collected, among which were *Cakile edentula* (Bigel.) Hook.; *Salsola Kali* L.; *Teucrium littorale* Bicknell, one of the recent segregates of *T. Canadense* L.; *Lechea maritima* Leggett; *Anmophila arenaria* (L.) Link, which is abundant here; *Chaetochloa glauca* (L.) Scribn. and the pretty pink-flowered *Sabbatia stellaris* Pursh.

Between Monachie and Woodridge, Bergen Co., N. J., September 21st, Mr. G. V. Nash collected *Eupatorium album* L.; *Gentiana Saponaria* L.; *Parnassia Caroliniana* Michx.; *Spartina polystachya* (Michx.) Ell.; *Cinna arundinacea* L., with purplish panicles; *Zizania aquatica* L. and *Woodwardia areolata* (L.) Moore.—S. H. BURNHAM.

A NEW COMMON NAME.—It seems that *Micrampelis lobata* (Michx.) Greene, the wild balsam-apple, mock apple, or wild cucumber, commonly cultivated and escaped in this vicinity, shares with *Bicuculla Cucullaria* (L.) Millsp. the euphonious appellation of "Dutchman's Breeches." The allusion is to the inner fibrous-netted part of the fruit, which encloses the seeds and bears a striking resemblance to a pair of wide pantaloons.

New Jersey is a good old Dutch colony and the name may be local as I never seen that it is used elsewhere. However, the plant is commonly so-called in Passaic.—EDWARD W. BERRY, Passaic, N. J.

NEWS ITEMS

Professor Appleton P. Lyon, a member of the Torrey Botanical Club, died suddenly at Mt. Vernon, N. Y., on November 27.

The death of Mr. Thomas Meehan, the well-known editor